

that recognize a metal chelate or portions thereof, wherein said reactive site is in a position proximate to or within said complementarity-determining regions,

wherein said reactive site is the mutation and,

wherein said reactive site interacts with a reactive group on said metal chelate and said reactive group is selected from carboxyl groups, hydroxyl groups, haloalkyl groups, dienophile groups, aldehyde groups, ketone groups, sulfonyl halide groups, thiol groups, amine groups, sulfhydryl groups, alkene groups, and epoxide groups.

2. (Previously Presented) The mutant antibody according to claim 1, wherein said reactive site is a side-chain of a naturally occurring or non-naturally occurring amino acid.

3. (Previously Presented) The mutant antibody according to claim 2, wherein said reactive site is the -SH group of cysteine.

4.-9. (Cancelled)

10. (Previously Presented) A polypeptide comprising a peptide sequence according to SEQ. ID NO.:5 (FIG. 12).

11. (Previously Presented) A polypeptide comprising a peptide sequence according to SEQ. ID NO.: 7 (FIG. 14).

12.-13. (Cancelled)

14. (Previously Presented) The mutant antibody according to claim 1, wherein said mutant antibody is a mutant of the antibody deposited as ATCC Deposit No. PTA-4696.

15. (Previously Presented) The mutant antibody according to claim 14, wherein serine-95 of the light-chain is substituted by a cysteine residue is the mutation.

16. (Previously Presented) The mutant antibody according to claim 1, wherein said antibody is a bifunctional antibody further comprising a second complementarity-determining region that specifically binds to a cell-surface antigen.

17. (Previously Presented) The mutant antibody according to claim 1, further comprising a targeting moiety covalently attached thereto, wherein the targeting moiety and the mutant antibody are not the same.

18. (Previously Presented) The mutant antibody according to claim 17, having the structure:

Ab L T

wherein,

Ab represents said antibody;

L is a chemical bond or linking group; and

T is said targeting moiety.

19. (Previously Presented) The mutant antibody according to claim 17, wherein said targeting moiety is an antibody that binds specifically to a cell surface antigen.

20. (Previously Presented) The mutant antibody according to claim 1, further comprising said metal chelate bound to said complementarity-determining region, wherein said chelate comprises a reactive functional group of complementary reactivity to said reactive site of said antibody.

21. (Previously Presented) The mutant antibody according to claim 20, further comprising a covalent bond formed by reaction of said reactive site of said antibody and said reactive functional group of said chelate, wherein said covalent bond is formed by the interaction of said reactive site and a reactive functional group which is selected from: an acryloyl moiety, a haloalkyl moiety, an alkene moiety, and an acrylamido moiety.

22. (Previously Presented) The mutant antibody according to claim 20, wherein said reactive group of said chelate is an acrylamido moiety.

23. (Previously Presented) The mutant antibody according to claim 1, wherein said metal chelate is a polyaminocarboxylate chelate of a metal ion selected from the group consisting of transition metal ions and lanthanide ions.

24. (Previously Presented) A pharmaceutical composition comprising the mutant antibody according to claim 17, and a pharmaceutically acceptable carrier.

25. (Currently Amended) A mutant antibody comprising a reactive site containing a cysteine residue not present in the wild-type of said antibody and six complementarity determining regions (CDRs) that recognize a metal chelate or portions thereof, wherein said cysteine is in a position proximate to or within said complementarity-determining regions, wherein said cysteine residue is the mutation and wherein said reactive site interacts with a reactive group on said metal chelate.

26.-41. (Cancelled)

42. (Previously Presented) A mutant antibody comprising a reactive site not present in the wild-type of said antibody and six complementarity determining regions (CDRs) that specifically bind a metal chelate, wherein said reactive site is in a position proximate to or within said complementarity-determining regions,

wherein said reactive site is the mutation and,

wherein said reactive site interacts with a reactive group on the metal chelate selected from carboxyl groups, hydroxyl groups, haloalkyl groups, dienophile groups, aldehyde groups, ketone groups, sulfonyl halide groups, thiol groups, amine groups, sulfhydryl groups, alkene groups, and epoxide groups.

43. (Cancelled)

44. (Cancelled)

45. (Previously Presented) A mutant antibody comprising a reactive site not present in the wild-type of said antibody and six complementarity determining regions (CDRs) that recognize a metal chelate or portions thereof, wherein said reactive site is in a position proximate to or within said complementarity-determining regions,

wherein said reactive site is introduced by mutagenizing a nucleic acid encoding said wild-type of said antibody and,

wherein said reactive site interacts with a reactive group on said metal chelate and said reactive group is selected from carboxyl groups, hydroxyl groups, haloalkyl groups, dienophile groups, aldehyde groups, ketone groups, sulfonyl halide groups, thiol groups, amine groups, sulfhydryl groups, alkene groups, and epoxide groups.

46. (Previously Presented) A mutant antibody comprising a reactive site not present in the wild-type of said antibody and six complementarity determining regions (CDRs) that specifically bind a metal chelate, wherein said reactive site is in a position proximate to or within said complementarity-determining regions,

wherein said reactive site is introduced by mutagenizing a nucleic acid encoding said wild-type of said antibody, and

wherein said reactive site interacts with a reactive group on the metal chelate selected from carboxyl groups, hydroxyl groups, haloalkyl groups, dienophile groups, aldehyde groups, ketone groups, sulfonyl halide groups, thiol groups, amine groups, sulfhydryl groups, alkene groups, and epoxide groups.